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Danthonia

Newsletter of the Australian Network for Plant Conservation



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Ecotourism on Lord Howe Island
Large Climbing Orchid
ANPC Workshop Reviews
Global Strategy for Plant Conservation

This Issue

Ecotourism on Lord Howe Island	2-3
Observations of the Large Climbing Orchid	4
National Coordinator's Report	4
ANPC Workshop Reviews	5-7
The Global Plant Conservation Strategy	8-9

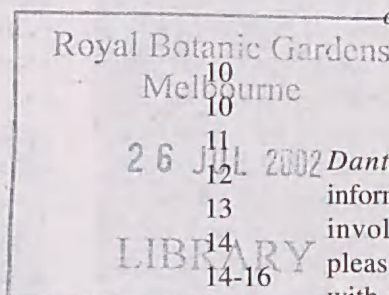


ANPC Inc. Mission Statement

"To promote and develop plant conservation in Australia."

Regular Features

Research Round-up	10
Electronic Addresses	10
Publications & Information Resources	11
Conferences & Workshops, Courses & Fieldwork	12
Regional Groups	13
And finally...	14
ANPC Membership List	14-16



Contributing to Danthonia

Danthonia is a forum for information exchange for all those involved in plant conservation: please use it to share your work with others. Articles, information snippets, details of new publications and diary dates are all welcome. The deadline for the September 2002 issue is 15th August, 2002.

Images are welcome as clear prints, slides, drawings, or in electronic format. Electronic images need to be at least 300 dpi resolution, submitted in at least the publication size, saved in tif, jpg or gif format.

Please send typed or handwritten articles, no more than 2 A4 pages, by fax, mail, e-mail, or diskette. If sending by e-mail, please send as a Word or Rich Text Format (rtf) attachment to: anpc@anbg.gov.au.

Danthonia

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Front cover illustration: Mountain Rose (*Metrosideros nervulosa*) in flower, with Mt Liddbird (Lord Howe Island) in the background. *Metrosideros nervulosa* is endemic to Lord Howe Island. If left unchecked, weed infestations could spread out from settlement areas and threaten this and many other unique species.

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Ecotourism—a Creative Approach to Weed Control on Lord Howe Island

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For a long time, volunteers have provided a major force for dealing with weeds, particularly in bushland sites in and around capital cities and major country centres. The goodwill of people desiring to do something to preserve special environments has proved to be a most useful adjunct for land management agencies attempting to deal with weeds. However, what do you do if the weed-infested area only has a small human population of 300, and is isolated by 700 km of ocean with a very expensive airfare? This is the case with Lord Howe Island, which is 700 km northeast of Sydney.



© Ian Hutton
Annabel Wheeler with a particularly large crown of Ground Asparagus.

The natural history of Lord Howe Island has long been recognised as unique and worthy of preservation—in fact as early as 1870 the whole Island was declared a botanical reserve, and has

always had some conservation status, culminating in World Heritage Listing in 1982. The Island has a rare and unique flora—having plants related to those in Australia, New Caledonia and New Zealand. About 50% of plant species are endemic to the Island, including seven endemic genera (*Flora of Australia*, 1994). Certainly an environment worthy of protection from being over-run by weeds.

The Island has had a small settlement for over 150 years, and like most places that Europeans have settled, weeds eventually found their way into the environment. A number of introduced plants have colonised areas away from the settlement and pose a threat to the long-term integrity of the native forest. In fact the 1997 review of World Heritage values of Lord Howe Island identified weeds as the major threat to the conservation of the Island's unique flora and fauna.

The Weed Problem

The main weeds of the Island include two species of Asparagus Fern—Climbing Asparagus (*Asparagus*

plumosus) and Ground Asparagus (*Asparagus densiflorus*)—as well as Cherry Guava (*Psidium cattleianum*) and Sweet Pittosporum (*Pittosporum undulatum*). Minor problems exist with Bitou Bush (*Chrysanthemoides monilifera* ssp. *rotundata*) and Madeira Vine (*Anredera cordifolia*). The local rangers and environmental team have outbreaks of these less problematic species mapped and under regular treatment, and eradication is close.

The management agency responsible for the Island, the Lord Howe Island Board, had a weed strategy prepared in 1992 and have had some World Heritage funding to provide control measures. A dedicated Environmental Section puts in many weeks of labour each year on weeds, but also has responsibility for other aspects of the Island—walking tracks, visitor facilities, feral animal control, wildlife monitoring, etc. The Lord Howe Island community is not large enough to draw on for a strong and active volunteer group. Over the years, some small groups have formed but folded; and some individual residents have made some impact doing their own patch. But the weeds are winning.

A Novel Approach

In what seems an impossible situation, a novel approach to the problem has evolved and is proving effective—ecotourism. For many years I had been including a voluntary half-day of weeding on eight-day nature tours to the Island, and even brought a small volunteer group over in 1995 specifically to remove Asparagus Fern from the Island's forests. In June 1997 I spoke with Sydney bush regenerator Rymill Abell about what else could be done. Rymill thought he could raise interest with a few fellow regenerators who may pay to visit Lord Howe Island and put in some time to help remove Asparagus Fern.



© Ian Hutton
A group of weeders on the 2001 trip take a well-earned rest while tackling Ground Asparagus on Transit Hill.

So a plan was struck to offer people a week-long holiday on Lord Howe Island, with a few hours weeding in the mornings and guided walks around the walking tracks in the afternoons to learn about the flora, fauna, geology and marine life. With a very active program of weeding in the morning and walking in the afternoon we decided to stay at

Pinetrees—the oldest guesthouse on Lord Howe Island, with a reputation for fine food and hospitality.

In June 1998, a team of 28 visited the Island and, under direction of the LHI Board rangers, tackled a major Ground Asparagus infestation on Transit Hill. In total, 380 hours were contributed—a great effort against the weeds. Everyone agreed it was one of the best ‘holidays’ they had ever had. With the success of this first trip, and assistance from Leonie Gale at the New South Wales Foundation for National Parks and Wildlife, a second trip was organised for 1999. This trip filled very quickly and was again very successful, with many of those from 1998 returning.



The interest in the weeding trips was accelerated by two community grants from the Threatened Species Network, a program of the World Wide Fund for Nature and the Endangered Species Program of the Natural Heritage Trust. The funding helped to purchase equipment and materials as well as helping with the volunteers' accommodation and travel costs. This incentive provided the catalyst for volunteer interest, raising the number of volunteers from 28 in year one, to 70 in year three, 160 in year four and now a projected 180 in 2002! The local community has also caught the enthusiasm from the travellers, with weekly community weeding parties becoming increasingly well attended.

The participants in initial trips were mainly experienced bush regenerators, but subsequent trips have had a mix of experienced hands and newcomers. Rymill provides a high level of tuition so participants quickly become confident in techniques. Activities include manual weed removal, chemical control, and seed removal. All activities are optional and volunteers only work where they feel comfortable.

The groups coordinate closely with the LHI Board Rangers, and with heavy infestations the Board team brushcut and poison prior to the volunteers coming in. Follow-up over the treated area is an important part of the program to ensure all plants have been removed. Nearly four years since the program started, the initial

areas are growing back very strongly with natives and it is heartening to see this happening.

The participants really become immersed in their work; sometimes it is hard to drag people away from the site for lunch. Through communicating with participants we have been able to find out just what it is that makes these trips so successful. Certainly the beautiful environment of Lord Howe Island is something that



Ground cover was almost 100% Ground Asparagus at the start of the Transit Hill walking track (left). Over several years the Ground Asparagus has been cleared around the track, and native plants have now grown back to form a ground cover (above).

appeals to many people; but for people to pay around \$1400 it needs more. Strong leadership, high quality natural history interpretation, contributing to preserving the environment, good company with people of similar outlook, close cooperation with the land management agency and a high standard of hospitality are provided. Success appears to be due to all of these ingredients being present, and the tremendous amount of enthusiasm they generate. That eagerness is essential to carry on the effort of dealing with Asparagus Fern for seven mornings in a row.

So, we suggest that for areas of isolated natural bushland remote from large population centres with a serious weed problem, organised eco-tours where people actually get involved with the problem (not just look out the coach window or talk about it) can make a major contribution. Find a strong bush regenerator leader, a person who knows the natural history of the area and can convey it in an interesting way, provide good hospitality, liaise closely with the local land managers and you will have a successful way of contributing to weed control. It is working on Lord Howe Island.

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Observations of the Large Climbing Orchid (*Pseudovanilla foliata*)

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This orchid is an example of the difficulties in nominating some plants (especially saprophytic* orchids) as Rare or Threatened. It is elusive, has unpredictable growth, no leaves, and climbs the host tree up to a height of 15 m by means of short yellow-green nodes that adhere to the bark of the tree. The base is found in or near rotting stumps and logs in rainforest and moist sclerophyll forest in northern New South Wales and Queensland. The flower panicles are up to 2 m long, each bearing up to 150 golden yellow flowers about 40 mm across—a spectacular sight! The fruiting body is a long bean-like pod similar to a vanilla pod, as the name implies.

The orchid was recorded in Lumley Park in the late 1970s and early 80s. It was not seen again in the park until 1998, when two plants were discovered at the base of two Blue Figs (*Elaeocarpus grandis*) that grow on the edges of a stormwater channel.

Lumley Park is a 1.7 ha remnant of sub-tropical rainforest within the urban area of Alstonville on the North Coast of NSW. A small group of volunteer bush regenerators have been working in the park for the past ten years on a regular basis, removing a range of exotic species including: the invasive weeds Madeira Vine

(*Anredera cordifolia*) and Wandering Jew (*Tradescantia fluminensis*); and the large woody weeds Large Leafed Privet (*Ligustrum lucidum*) and Cocos Palm (*Syagrus romanzoffianum*).



A flower of *Pseudovanilla foliata*

During the past three years all the orchids have bloomed heavily, filling the park with their intense perfume and spreading pollen throughout the park. The orchids have germinated in great numbers; last year eight plants were found. A couple of these were growing at the base of some Large Leafed Privets that had been poisoned four years previously, others were found at the rotting base of two Cocos Palms that had been cut down in 1996. First time I've ever seen a

good use for these two invasive weed species!

Has the regeneration work provided favourable conditions for this unusual species to thrive? This orchid, and many species like it with short or unusual life cycles, are increasingly at threat from urbanisation and the destruction of remnant rainforest.

[* A saprophytic plant derives nourishment directly from dead or decaying organic matter - Ed.]

Reference: Bishop, A. (1996) *Field Guide to Orchids of NSW and Victoria*. University of New South Wales Press, Sydney.

National Coordinator's Report

Jeanette Mill, ANPC National Coordinator

The ANPC Plant Conservation Techniques Training Program is in full swing with two workshops held in April. A two-day course entitled Demystifying Threatened Plant Conservation was held in Wollongong in mid-April. Conservation of Ecological Communities was the focus of a one-day course held at Mount Annan Botanic Garden in Sydney. Course reports from participants are included in this issue of *Danthonia*. There will be one further course as part of the series funded by the NSW Environmental Trust. In addition, we are in the process of compiling a manual of plant conservation techniques. Members' input is welcome on the content of the manual.

ANPC Course Sponsors

Our gratitude goes to the course hosts (Wollongong City Bushcare and Royal Botanic Gardens Sydney) who

have been awarded ANPC Silver Sponsor certificates. We are also grateful to the other sponsors NSW Environmental Trust, Wollongong Botanic Garden, Wollongong City Council, NSW National Parks and Wildlife Service, and Council of Heads of Australian Botanic Gardens.

New Sponsor Member

The ANPC is pleased to announce its second Conservation Contributor Sponsor member for 2002, WMC Olympic Dam Operations.

National Office Staff Change

We would like to welcome Laura Vallee to the National Office. Laura is the new Project Officer for the ANPC. Our thanks go to Rosie Smith and Claire Brown for sharing this role in an acting capacity over the last few months. We wish them well in their new endeavours.

ANPC Workshop Reviews

Conservation of Ecological Communities Mount Annan Botanic Garden, 30th April 2002

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Those concerned with plant conservation have become increasingly aware of the need to not only conserve threatened species, but also ecological communities. There are currently 27 endangered ecological communities listed nationally (under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*) and 48 listed in NSW alone (under the NSW *Threatened Species Conservation Act 1995*). What is an ecological community? How can we conserve these ecological communities? Does management differ to that of single species conservation? In response to the many questions regarding the conservation of ecological communities, the ANPC held a workshop on their conservation. The workshop was hosted by the Royal Botanic Gardens Sydney and was held in the lovely setting of Mount Annan Botanic Garden.

Presenters included people involved in a diverse array of activities associated with ecological community conservation including rehabilitation, recovery planning and promoting community (of the human kind) involvement. Rainer Rehwinkel, from the NSW National Parks and Wildlife Service (NPWS), spoke about the conservation of endangered ecological grassy communities in the NSW Southern Tablelands. Peter Cuneo, from Mount Annan Botanic Garden, spoke about the recovery planning approach for ecological communities in western Sydney, concentrating on the

Cumberland Plain Recovery Plan. Louise Brodie, of the NSW NPWS, spoke about community involvement in conservation. Robert Kooyman spoke about rainforest community conservation, focussing on the Big Scrub of northern NSW. The day was finished off with a field trip looking at the regeneration of Cumberland Plain Woodland at the Mount Annan Botanic Garden's site.



Debra Little, from Mount Annan Botanic Garden, talks to workshop participants about the regeneration of the Cumberland Plain Woodland

It was not only the range of presenters and their knowledge that made the day worthwhile, but also the range of participants. Over eighty people attended the workshop, with participants coming from a diverse range of organisations including: councils, botanic gardens, conservation societies, volunteer groups, government agencies and environmental consultancies. It was even a great opportunity for myself to meet other NPWS staff. It was wonderful to see so many people involved

in and passionate about ecological community conservation. I took just as much home from the chats over lunch and morning and afternoon tea as I did from the formal presentations.

Obviously we cannot answer all questions regarding ecological community conservation yet, but it is opportunities for information exchange like this workshop that will ensure we are all on the right track. I believe the one-day ANPC workshops are a great opportunity for knowledge transfer and networking and I hope there are many more to come.



This project has been assisted by the New South Wales Government through its Environmental Trust

ANPC Workshop Reviews (Cont'd)

Demystifying Threatened Plant Conservation Wollongong Botanic Garden, 16th–17th April, 2002

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In April Wollongong City Bushcare hosted the ANPC training program Demystifying Threatened Plant Conservation at Gleniffer Brae, the historic home in the Wollongong Botanic Garden. The topics ranged from how and why threatened plant species are listed to the ecology of some of the Illawarra's rare or threatened plant species. A brief synopsis of the various lectures is provided below.

ANPC National Coordinator Jeanette Mill provided an overview of diversity hotspots and the incidence and rarity of plant species which have been listed as threatened. A summary of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and (for NSW) the *Threatened Species Conservation Act 1995* (TSC Act)

revealed that a total of 1243 plant species and 27 endangered ecological communities have been listed under Commonwealth Government legislation, whilst 545 plant species and 48 endangered ecological communities have been listed in NSW.

Environmental Planning Officer (Planning NSW), Chris Lacey, provided a global perspective of how our national legislative framework contributes to the international strategies, agreements and conventions that form a basis for global conservation objectives. Chris drew comparisons between our pre- and post-1996 threatened species legislation: he noted that, prior to the introduction of the TSC Act, the gazettal of rare plant species was limited to species of horticultural interest on Schedule 13 of the *National Parks and Wildlife Act 1974*. The joint publication of *Rare or Threatened Australian Plants (RoTAP)* by CSIRO and ANCA (Briggs & Leigh, 1995) provided the first comprehensive data for those species which had been identified as threatened.

Natural Areas Officer Paul Formosa (Wollongong City Council) gave a synopsis of urban vegetation management with specific reference to strategies, planning and operational factors which are functional in the management of natural areas. Among a number of points, Paul raised the question of who will ultimately bear the cost of nature conservation, given that current legislation

such as the TSC Act and the EPBC Act lends Councils a number of opportunities to pursue biodiversity conservation. He noted that although the *Local Government Act 1993* provides councils with ample power to initiate and implement conservation projects and strategies, it also enables various mechanisms for community scrutiny of, and involvement in, councils' environmental agendas.

Wollongong City Council's Bushcare Officer, Lynne Kavanagh, outlined the activities of the Budgeong Creek Landcare Group, founded in 1992. Lynne raised several questions, for example: Why does degeneration of community lands continue until an interested member of the public initiates restoration activities? Why is there a lack of formal training undertaken by new members of Landcare which may pose an inadvertent threat to vegetation? Why do volunteers often seek the 'quick hit' by selecting those areas where the results of their efforts are immediate? Why do funding bodies tend to apply greater value to revegetation over restoration projects? Why is funding granted for periods of time so short that work programming is impossible beyond one year?

South Coast field botanist and technical officer, Anders Bofeldt (Wollongong Botanic Garden) provided an interesting overview of the ecology of threatened plant species in the Illawarra. Anders noted that as the sandstone flora is largely restricted to the Woronora Plateau in the



Graeme Bradburn (left) from the Australasian Native Orchid Society Illawarra, and Martin Bremner, NSW NPWS, talk about the *Pterostylis gibbosa* recovery project on the Transgrid site at Yallah.

Illawarra region, the vegetation of the Illawarra is best known for its mesic qualities. He informed us that the Illawarra region simultaneously forms the southern limit of distribution for many subtropical plant species and the northern limit for some cool temperate plant species. As a result of the lifting of the Woronora and Hornsby Plateaus in the Sydney basin, many of those species which occur on fertile soils and prefer a subtropical climate are limited to disjunct populations in the Illawarra. Anders noted that plant species which are known to occur on the north coast are still being found on the south coast including two rainforest and rainforest/open forest ecotone species. Plant species which occur in disjunct populations often become restricted and regionally threatened as a result of habitat pressures. Anders also noted that whilst some plants are naturally rare, accelerated rarity is common due to a range of threats including habitat loss and fragmentation, mining and quarrying, urban and industrial development, fire, weed invasion and lack of genetic diversity.

During his talk, Associate Professor Paul Adam (UNSW, Deputy Chair NSW Scientific Committee) noted that any person may make nominations to change the schedules of the TSC Act, but that addressing the criteria for endangered populations may be particularly difficult. For a population to be listed as endangered it must, at the time of nomination and assessment, be either listed as a vulnerable species or not listed as a threatened plant species (i.e. on Schedule 1). It must also meet other criteria relating to its conservation significance and population or habitat decline. Associate Professor Adam also stressed the following points:

... The threatened flora of NSW is not a random sample, taxonomically, ecologically or biogeographically of the total flora. Whether the departures from randomness are real (i.e. some taxa are inherently more likely to be more threatened than others) or a reflection of bias in the processes of compiling the schedules, is still to be determined. However, the additions to the schedules since 1996 have been concentrated in particular regions (those which already had high concentrations of threatened species). Additions have been primarily flowering plants, reflecting lack of knowledge on the occurrence, distribution and abundance of most cryptogams.

Threatened Species Officer Martin Bremner (NPWS) presented an overview of recovery planning for the threatened flora of the Illawarra. Martin discussed the 'step-sieve' method of determining priorities in the preparation of recovery plans, which considers the plant species' legal status, ecological factors and available resources.



Jane Rodd, from Anne Clements and Associates, tries her hand at locating the elusive rosettes of *Pterostylis gibbosa*.

Graeme Bradburn, of the Australasian Native Orchid Society (ANOS, Illawarra), gave an insight into the ecology of the endangered Illawarra Greenhood Orchid (*Pterostylis gibbosa*). A site visit was undertaken to the Transgrid property at Yallah where continuing studies of this population have been undertaken since 1990. Recently burnt areas are expected to contribute to knowledge crucial in recovery planning for the species, but this data will not be evident until capsule formation in 2002.

Whilst details of the technical aspects of plant conservation were useful, I found it particularly pleasing to see the number of participants from various local government bodies who discussed and promoted conservation issues.

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The Global Plant Conservation Strategy—Challenge and Opportunity

David R. Given, Chair, IUCN Species Survival Commission Plant Conservation Committee
ANPC Vice-President

One of the most important dates in the plant conservation calendar is 19 April—on Friday 19 April 2002 delegates at the Conference of the Parties to the Convention on Biological Diversity (COP6–CBD) adopted the Global Strategy for Plant Conservation. This is a landmark in the history of the CBD, as it is the first time that plant conservation issues have received such detailed scrutiny by the Governments of the world (183 countries are parties to the Convention).

The development of the Strategy has been the result of a concerted effort by many people and organisations including Botanic Gardens Conservation International, the Canary Islands Government, the Food and Agriculture Organisation of the United Nations, the secretariat of the Convention on Biological Diversity, Peter-Wyse Jackson (Botanic Gardens Conservation International), Peter Raven (Missouri Botanical Garden) and David Bramwell (Director, Gran Canaria Botanic Garden). The concept of a global strategy for plants has been in a number of people's minds for some years, but it was the XVI International Botanical Congress and the persuasive vision of Peter Raven that got the proposal for a global strategy rolling.

This led to three 'Gran Canaria Initiative' meetings to flesh out the concept of a global strategy, then to develop 16 targets for its implementation. The targets are a new development for the CBD but, at the Conference of Parties, there was general welcoming of global targets as it allowed national conservation strategies and priorities to feed into an overall global target.

While all of the 41 countries and regional blocks welcomed and supported the Strategy, they also noted the need for additional funding for its implementation. As a first gesture, Botanic Gardens Conservation International, formerly the Botanic Gardens Conservation Secretariat of IUCN, offered to second a staff member to the CBD Secretariat for two years to shepherd the Strategy and ensure action is undertaken. This gracious offer was warmly greeted by CBD Parties and opened

up a new phase of private and governmental collaboration.

If the Strategy is to reach its targets by 2010, every country will need to contribute whatever it can to promote plant conservation. Australia and New Zealand are no exception. Long known as unique pieces of biological real estate this part of the world has extraordinary levels of endemism coupled with high levels of threat to its biota. The biological diversity of New Zealand, one of the last places on Earth to be settled by humans, is in particular trouble. It has one of the worst records of historic loss of indigenous biodiversity overall. In Australia there have been significant losses of plant diversity at all levels from genetic to ecosystem.

'The strategy is not only for nature but for the millions of people who depend directly on wild plants ... it will take courage by Ministers to sign up because it invites scrutiny ... Failure to rise to this challenge will, however, consign the plant life of this planet to oblivion.'

Jane Smart, Director of Plantlife

The ANPC will have an important role in the implementation of the Strategy. Not only does the role derive from the Commonwealth of Australia's acceptance of the Strategy at national level, but ANPC is also a Specialist Group member of the Species Survival Commission (SSC) of IUCN. As an organisation

IUCN has been involved with development of the Strategy, especially through the IUCN/SSC Plant Conservation Committee. Through its own strategic plan for plants, SSC will be looking to collaborative involvement of the SSC network to implement parts of the strategy at both global and regional levels. ANPC President Kingsley Dixon and Vice-President David Given have both been involved in the development of the Strategy. An important country and regional task will be the development of geographically-based plant strategies rather than plant strategies based on particular taxonomic groups or ecosystems. This has already been started for Europe, and parts of Africa are interested in starting work on a draft strategy prior to the World Summit on Sustainable Development in Johannesburg in September 2002. The targets will be a challenge for New Zealand and Australia, even with both countries priding themselves on a 'clean-green' image. This image itself, especially in relation to exports and tourism, means that we should be aiming to ensure that our performance is

significantly better than average. Of the 16 targets we can briefly look at two.

Target 6 states that, '*at least 30 per cent of production lands [are to be] managed consistent with the conservation of plant diversity.*' This implies: conservation of the plant diversity which is an integral part of the production system itself; protection of other plant species in the production landscape that are unique, threatened, or of particular socio-economic value; and use of management practices that avoid significant adverse impacts on plant diversity in surrounding ecosystems, for example by avoiding excessive release of agro-chemicals and preventing unsustainable soil erosion. There is world-wide interest in integrated production methods in agriculture and forestry and on-farm management of plant genetic resources. Target 6 is very significant for Australia and New Zealand where agricultural exports are so important. To retain our clean-green exporting niche means management that is consistent with nature conservation, and a new level of cooperative involvement of private landowners, producer organisations and local governments over the next eight years.

Target 15 is of particular interest to the ANPC. It states that, '*the number of trained people working with appropriate facilities in plant conservation [is to be] increased, according to national needs, to achieve the targets of this strategy.*' In terms of professionals, New Zealand and Australia are reasonably well placed. But there is considerable need for a wide range of training, from up-skilling professionals, through training local government

officials and awareness-raising and training of people in the industrial sector, to increasing training opportunities for volunteers and landowners. Training has been developing as a niche activity for ANPC but it needs to be greatly expanded and resourced to meet the challenges imposed by the new Strategy.

Other targets include: development of a widely accessible working list of known plant species; a preliminary assessment of the conservation status of all known plant species; development of research-based protocols for plant conservation and sustainable use; conservation of key geographic areas; conservation of 60% of the world's threatened species both *in situ* and *ex situ*; conserving genetic diversity of crops and other socio-economic plants, along with associated local and indigenous knowledge; management plans for major alien species; having no species of wild flora endangered by international trade; deriving plant-based products from sustainably managed sources; halting the decline in plant resources and associated knowledge where this supports sustainable livelihoods; communication, education and public awareness programmes; and strengthening networks for plant conservation.



Can we achieve such targets? This is a challenge that will cost commitment, some re-alignment of funding, and even some redirection of government policy. The bigger question is: can we afford not to achieve the targets? The road will not be easy, but if we can cooperate, facilitate the means, raise awareness and increase commitment, the future should look very bright for the unique plant diversity of this part of the world.

For more information on the Global Plant Conservation Strategy see the following websites:
<http://www.iucn.org> <http://www.plantaeuropa.org> <http://www.biodiv.org>

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For regional group reports see page 13.

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Electronic Addresses

An International Review of the Ex Situ Plant Collections of the Botanic Gardens of the World

This report presents a new overview and review of the botanic gardens of the world and their *ex situ* plant collections. It is estimated that there are 2204 botanic gardens known in the world, in 153 countries. It documents a total of 142 million herbarium specimens in botanic garden herbaria and 6.13 million accessions in their living collections. Part I of the report provides an overview and analysis of botanic gardens worldwide and by region. Part II of the report includes details of the *ex situ* collections in each individual botanic garden, sorted and presented by country.

<http://www.biodiv.org/programmes/socio-eco/benefit/bot-gards.asp>

New Threatened Species Network Website

The TSN website provides fact sheets, reports, links to other conservation organisations, information about legislation and grants, and details of up-coming volunteer activities and other events around Australia.

<http://www.wwf.org.au/tsn>

The Integrated Biodiversity Conservation Assessment (IBCA) Website

A website has recently been established to disseminate the project outputs from the Integrated Biodiversity Conservation Assessment (IBCA) Program of the 1999 NSW Biodiversity Strategy. The IBCA website contains technical reports and guidelines plus booklets and fact sheets of bioregional assessment projects for Cobar, Riverina and Darling Riverine Plains bio-regions as well as brief project summaries for other projects that are part of the IBCA program. The IBCA website is very much a work in progress and more publications will be made available as projects are completed.

<http://www.npws.nsw.gov.au/wildlife/biodiversity/strategy/ibca/index.html>

Earthrights Environmental Directory

A directory of environmental organisations around the world, from government departments to activist organisations.

<http://www.earthrights.com>

By Joe Halloran

Publications and Information Resources

The Alps in Flower

I.R. McCann, 2001, Victorian National Parks Association Inc.

The Alps in Flower provides the reader with a pictorial introduction to the high country plants of southeastern mainland Australia.

Published by the Victorian National Parks Association, 10 Parliament Place, East Melbourne 3002. Phone: (03) 9650 8296 Fax: (03) 9654 6843 Email: vnpa@vnpa.org.au



Ainsworth and Bisby's Dictionary of Fungi

P.M. Kirk, P.F. Cannon & J.C. David, 2001, CABI Publishing

This book aims to give a broad look at the total accumulated knowledge on fungi (including lichens), which makes it an ideal handbook for those with an interest. The dictionary provides a complete as possible account of the generic names and terms used in descriptions of fungi, as well as examining the systematic position, distribution and number of accepted species for each genus.

Published by CABI Bioscience, Bakeham Lane, Engham, Surrey TW20 9TY, UK Ph: +44 (0) 1491 829000 Fax: +44 (0) 1491 829 100 Email: bioscience.egham@cabi.org Website: www.cabi-publishing.org

Flora of Australia Volume 43. Poaceae 1: Introduction and Atlas

2002, Australian Biological Resources Study

Volume 43 of the acclaimed *Flora of Australia* series provides an introduction to the Poaceae (grasses) and to grass biology in Australia. Essays by a team of leading scientists review the latest Australian research on phylogeny, classification, anatomy, physiology, ecology, palaeobotany and biogeography of Australian grasses. Identification keys and a well-illustrated guide to parts of a grass provide the means to identify grasses to genus level. This volume also includes an atlas with over 1400 maps showing nation-wide distributions of the native and naturalized species currently recognized as occurring in Australia.

Available from CSIRO Publishing, PO Box 1139, Collingwood, VIC 3066 Ph: (03) 9662 7666 Fax: (03) 9662 7555 Email: publishing.sales@csiro.au

Australia: State of the Environment 2001

Australian State of the Environment Committee, 2002, CSIRO

This is the second independent report on Australia's environment. The book comes with a CD-ROM, which contains the seven thematic reports that the book is based on. The themes are atmosphere, biodiversity, coasts and oceans, human settlements, inland waters, land and natural and cultural heritage.

The full report can be obtained at <http://www.ea.gov.au/soe> or by contacting CSIRO Publishing, PO Box 1139, Collingwood, VIC 3066. Ph: (03) 9662 7666 Email: publishing.sales@csiro.au

EUCLID: Eucalypts of Southern Australia 2nd Edition

M.I.H. Brooker, A.V. Slee, J.R. Connors & S.M. Duffy, 2002, Centre for Plant Biodiversity Research

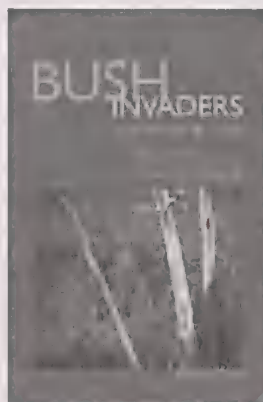
This is an interactive identification and information system covering more than two-thirds of eucalypt species. Containing over 6500 colour images, this new edition of EUCLID includes the species in southern Western Australia and western South Australia as well as those south-eastern species covered in the first edition. Features include: a total of 689 taxa covered in total; an additional 365 taxa in this addition; additional geographic characters relating to new areas; and photographs of seeds for all species.

Available from CSIRO Publishing, PO Box 1139, Collingwood, VIC 3066, Australia Ph: (03) 9662 7666 Fax: (03) 9662 7555 Email: publishing.sales@csiro.au

Bush Invaders of South-East Australia

Adam Muyt, 2001

Published by R.G. & F.J. Richardson



This publication lists and describes the major weeds in south-east Australia and provides details on how to best control and remove them. There are full listings for 93 species and notes on an additional 50 species.

For more information and ordering see:

www.weedinfo.com.au
Ph: (03) 5286 1533 Email: Richardson@weedinfo.com.au

By Joe Halloran

Conferences & Workshops

By Joe Halloran

Native Seed Dormancy Master Workshop

5th-6th August 2002, University of Western Australia, Perth

Seed dormancy is a major barrier to the successful rehabilitation of native vegetation of degraded landscapes in Australia. This workshop aims to deliver concepts for the development of national standards for defining seed dormancy mechanisms and devise new and innovative directions for researching methods of dormancy alleviation for Australian species. It will be hosted by Prof. Jerry Baskin and Prof. Carol Baskin, University of Kentucky. For more information contact Dr Dave Merritt, Kings Park Botanic Garden, West Perth, WA 6005. Ph: 08 9480 3640

The Seventh International Mycological Congress

11th-17th August 2002, Oslo, Norway

Themes include: the promotion of mycology; conservation of fungi; and biodiversity of southern hemisphere fungi, which will be explored through parallel symposia, open symposia, workshops, satellite meetings and poster sessions. For more information see <http://www.uio.no/conferences/imc7/index.html> or contact Plus Convention on Ph: + 47 2292 5540 Email: imc7@plus-convention.no

Association of Societies for Growing Australian Plants 2002 Queensland State Conference and Campout

29th September-6th October 2002, Runaway Bay, QLD

Contact Alan Donaldson, 19 Mingaletta Drive, Ashmore, QLD 4214. Ph: 07 5539 1593 Email: adonalds@austranet.com.au

"Celebrating the Mountains" An Australian Alps Conference and Events

23rd-28th November 2002, Jindabyne, NSW

This conference will be hosted by the Australian Alps Liaison Committee as part of International Year of Mountains. The program will include major field visits, plenary sessions, concurrent sessions, concurrent site visits, an industry/trade exhibition and poster displays. Sessions will be presented by speakers from Australia and overseas. See <http://www.australianalps.ea.gov.au> for more information, or contact Janet Mackay & Associates, 43 James St, Berridale, NSW 2628 Ph: 02 6456 3876 Email: IYM@bigpond.com

Connecting with Plants—Lessons for Life: 5th International congress on Education in Botanic Gardens

29th September - 4th October 2002, Sydney

The congress will focus on five themes: evaluation and research; multiculturalism and indigenous issues in interpretation; linking science and sustainability; novel methods in interpretation/communication; and forming partnerships. Visit the website: <http://www.rbgsyd.gov.au/HTML/SCIENCE/BGCIcongress.html> Ph: 02 9231 8111 (Janelle Hatherly)

Ecology 2002 Conference

1st-6th December 2002, Cairns

This is the second joint conference of the Ecological Society of Australia and the New Zealand Ecological Society. The scientific program for Ecology 2002 includes a one-day course for postgraduate students and four days of scientific sessions. Anyone who has registered for the conference is eligible to make a presentation. Open forum presentations, talks and poster presentations can cover any subject of relevance to ecologists. There are 18 symposium topics proposed, including: forest restoration in theory and practice; global plant conservation strategy—what can Australia and New Zealand achieve by 2010; and making the connections: applying ecological research to management of threatened species/ecosystems. For more information contact the secretariat office at: Ecology 2002, Centre for Tropical Agriculture, PO Box 1054, Mareeba, QLD 4880 Fax: 07 4042 3593 <http://www.tesag.jcu.edu.au/ecology2002/index.html>

Courses & Fieldwork

Wollemi Pine Information Day

7th September 2002, Choral Hall, Conservatorium of Music, Sydney

This information day will involve hearing the latest results of research on the Wollemi Pine's life history, reproduction, ecology, evolutionary history and its development in horticulture. Bookings are essential. Contact the Friends of the Royal Botanic Gardens Ph: 02 9231 8182 Email: friends@rbgsyd.gov.au

'Remembering Roadsides'—Their Management and Restoration

6th August 2002, Melbourne Region

This course is part of Greening Australia's Port Phillip Training Program. It will explore biodiversity conservation, addressing and managing weeds, and revegetation. Contact Lydia Fehring Ph: 9450 5302 Email: lfehding@gavic.org.au

ANPC Regional Groups

Sydney Region

On a lovely sunny day, a small group of ANPC members gathered at the Royal Botanic Gardens, Sydney for a lecture on freshwater algae given by Stephen Skinner.

The algae are often referred to as one of the forgotten flora, and it was clear at the lecture that over the last century it has had a pretty raw deal as a whole. We never notice these organisms unless they show up our negligence or bad behaviour when they bloom, but most of the species that Stephen works on are very well behaved and even shy. He concentrates on the Oedogoniaceae and the blanket-weeds and other green algae that grow in similar conditions, the Cladophoraceae and Chaetophoraceae. Of these, only *Cladophora glomerata* and *Pithophora oedogonioides* can be a problem. These are blanket weeds, which take-off in rivers and creeks over-fed with leached super phosphate and other fertilisers.

Traditionally algae have been classified into Green Algae, Brown Algae, Red Algae and Blue-Green Algae. This picture has changed dramatically in the last few years, especially for the Greens. Now some green algae—especially the desmids and *Spirogyra* and its relatives—along with the stoneworts and a few others are understood to be closely related to land plants. Others, such as the marine greens, are in a branch of their own, while most of the rest of the freshwater greens form a third group.

The red algae are on an evolutionary pathway of their own, possibly linked to moulds and fungi. The blue-greens are similar to bacteria, sharing with them the non-nuclear

form of cellular construction. The brown algae encompass many groups that share almost as much in their differences as in their similarities. They rival trees in physiological and anatomical variability, ranging from the tiny chitrids that parasitise all kinds of aquatic and soil organisms, through the diatoms, the velvet weeds and their relatives, to the giant kelps.

After giving us the general rundown on algae, Stephen led us through the genera on which he is currently working: *Rhizoclonium*, *Pithophora* and *Cladophora*. He had some fresh specimens for us to look at as well as photographic slides and microscope slides. Close-up some of the algae are the most beautiful looking organisms, very delicate and fragile. It was certainly a very interesting presentation and I know that I have learnt a lot more about freshwater algae.

If you would like to contribute to Stephen's work by collecting freshwater specimens, please contact him on Ph: 02 9231 8150 for instructions on recording details and packaging. The more specimens he gets from around the country, the better the picture will develop of new species and current distributions - all of which are pretty sketchy at the moment.

Other people working on algae in NSW include: Stoneworts - Dr. Garcia at Wollongong University; Desmids - Mike Dingley at The Australian Museum; Snots, velvet mosses, silkweeds, red algae and blanket weeds - Stephen Skinner at RBG Sydney; Problem species (i.e. filter blockers, blooms etc.) - Sydney Water.

Coordinator: Tracey Armstrong, Mount Annan Botanic Garden. Ph: 02 4634 7939 Tracey_Armstrong@rbgsyd.nsw.gov.au

NSW South West Slopes Region

NPWS Crimson Spider Orchid Recovery Plan

The first surveys of the season for new leaves will begin shortly, but a lack of rain through April and early May might see a late season developing. We will continue to use indicator species in our area to see which species' emergence mirrors that of the *Caladenia concolor*. Communications will continue with the group caring for the Crimson Spider Orchids at the Chiltern Box - Ironbark National Park, to improve our knowledge of these highly threatened marvels.

Future Planning

City of Albury are developing a biodiversity study strategy at the moment, to become a major component of the over-riding Open Space Strategy. A community

biodiversity survey will be conducted to highlight the natural treasures of our region.

Tracy Harrison has almost completed Albury City Council's roadside, remnant vegetation and waterways survey and this has enabled us to identify levels of environmental weed infestations, essential areas for revegetation works and high quality natural areas. The action plan arising from the survey will take into account known rare, endangered and threatened species and communities.

Along with the current determination of White and Yellow Box and Blakely's Red Gum as an endangered ecological community, the Regent Honeyeater, Turquoise Parrot, Crimson Spider Orchid and *Senecio garlandii* will become high priorities in Council's future planning.

Coordinator: Paul Scannell, Albury Botanic Gardens. Ph: 02 6023 8769 pscannell@alburycity.nsw.gov.au

And finally....

Kosciuszko National Park Plan of Management Review

There has been an invitation to all interested parties to participate in the Plan of Management Review for Kosciuszko National Park. The Park covers approximately 675 000 ha, is recognized as a UNESCO biosphere reserve and contains six wilderness areas. The Plan details how the park will be managed over the next 15 to 20 years.

For information about the Plan of Management Review go to www.npws.nsw.gov.au or contact: Kosciuszko National Park Plan of Management, PO Box 733, Queanbeyan NSW 2620 Ph: 1800 200 208 Email: kosciuszkopom@npws.nsw.gov.au

Grassy Box Woodlands Project

This is a Natural Heritage Trust funded project that aims to provide support and incentives to landholders who want to protect remnant Grassy Box Woodlands (yellow box and white box). Applications are open to individual landowners, community groups, Local Governments and Rural Protection Boards. Examples of suitable projects or project components include fencing, weed control, and development and implementation of management strategies for remnants. Applications close on the 30th of August 2002.

For more information contact Heather Pearce, Community Solutions Ph: (02) 9818 2684

2002 Conservation Photographer Competition

Entries are invited for the 5th annual Conservation Volunteers Australia Conservation Photographer Competition. There are three categories: Wild Places; Flora and Fauna; and Conservation Volunteers. First prize in each category wins \$300, second prize is \$200 and third receives \$100. There is also an extra \$200 for the photographer whose photograph is judged to be the best overall entry. Entries close on Friday 2nd August 2002.

For more information contact Conservation Volunteers Australia Ph: 1800 032 501 Email: conservationvolunteers.com.au

ANPC Membership List

Please note: date in brackets indicates the member has joined or renewed for that year. Addresses and names of contact persons are available from the National Office. Memberships are valid for the calendar year only!

Corporate Members

ACT Parks and Cons. Service, ACT (2001)
Alcoa World Alumina Australia, WA (2001)
Anne Clements & Associates Pty Ltd, NSW (2001)
Aust Institute of Horticulture Inc, NSW (2002)
Australian National Botanic Gardens, ACT (2002)
Aust Tree Seed Centre (CSIRO), ACT (2001)
Botanic Gardens of Adelaide, SA (2002)
Brisbane Botanic Gardens, QLD (1999)
C.A Henschke & Co., SA (2001)
Centre for Mined Land Rehabilitation, QLD (2002)
Centre for Plant Biodiv Rsch, ACT (2002)
Centre for Plant Conservation Genetics, NSW (2001)
City of Albury, Parks & Recreation Business Unit, NSW (2002)
Coffs Harbour City Council, NSW (2002)
Council of the City of Orange - Orange Botanic Gardens, NSW (2001)
CSIRO Publishing, VIC (2000)
Dept of Conservation and Land Management, WA (2000)
Dept Infrastructure, Planning & Environment, NT (2002)
Eurobodalla Native Botanic Gardens, NSW (1999)
Flecker Botanic Gardens, QLD (2000)
Forestry Tasmania, TAS (2000)
Geelong Botanic Gardens - City of Greater Geelong, VIC (2001)
Macedon Ranges Shire Council, VIC (1999)
Maroochy Shire Council, QLD (2002)
NSW National Parks & Wildlife Service, NSW (2001)

Pacific Power, NSW (2000)
Qld Parks and Wildlife Service (Central Region), QLD (2002)
Queensland Herbarium, Dept of Environment & Heritage, QLD (2001)
Redland Shire Council, QLD (2002)
Roads and Traffic Authority, NSW (2001)
Royal Botanic Gardens Melbourne, VIC (2002)
Royal Botanic Gardens Sydney, NSW (2002)
Royal Tasmanian Botanical Gardens, TAS (2002)
Standing Committee on Forestry, ACT (2001)
Strathfield Municipal Council, NSW (2000)
Tasmanian Parks & Wildlife Service, TAS (2002)
Australian Arid Lands Botanic Garden, SA (2001)
Townsville City Council, QLD (2001)
WMC Olympic Dam Operations, SA (2002)
Wollongong Botanic Garden, NSW (2000)
Zoological Parks and Gardens Board of Victoria, VIC (2002)
Zoological Parks Board of NSW, NSW (2002)

International Associates

Canada

Canadian Botanical Conservation Network (2002)
David Brackett, IUCN SSC (2002)
Roy L Taylor (2002)

Fiji

South Pacific Regional Herbarium (2000)

Germany

Botanischer Garten und Botanisches (2002)

India

Alexander Amirtham (2002)
Indian Society for Conservation Biology (2002)
Prof Suresh Pathiki (2002)

Indonesia

Botanic Gardens of Indonesia (Kebun Raya) (2002)
Eka Karya Botanic Garden (2002)
Indonesian Network for Plant Conservation (2002)

New Zealand

Auckland Plant Collections Network (2002)
David Given (2002)
Neil Mitchell (2001)
Wellington Plant Conservation Network (2002)

Papua New Guinea

Paul Chatterton (2002)

South Africa

John Donaldson (2001)
National Botanical Institute (2002)
Southern African Botanical Diversity Network (SABONET) (2002)

Sri Lanka

Zackeriya Mohamed Zarook (2002)

Switzerland

Conservatoire et Jardin Botaniques (2002)
Wendy Strahm (2002)

UK

Botanic Gardens Conservation Intl (2002)
 IUCN/SSC UK Office (2002)
 PlantNet (2002)
 Royal Botanic Gardens Kew (2001)
 Timothy Walker (2002)

United Arab Emirates

IUCN/SSC Re-introduction Specialist Group (2002)

USA

Center for Plant Conservation (2002)
 Darren Touchell (2002)
 Don Falk (2002)
 ECO-SEA (2002)
 Georgia Endangered Plant Stewardship Network (2002)
 Missouri Botanical Garden Library (2003)

Western Samoa

Vailima Botanic Gardens (2002)

Community Groups

Association of Societies for Growing Australian Plants, NSW (2002)
 Aust Plants Society - Central West Grp Inc, NSW (2000)
 Aust Plants Society - Newcastle Grp Inc., NSW (2000)
 Aust Plants Society - North Shore Group, NSW (2001)
 Aust Plants Society - Northern Grp Inc, TAS (2001)
 Aust Plants Society - Nowra Group, NSW (2002)
 Aust Plants Society - SW Slopes, NSW (2000)
 Aust Plants Society, NSW (2002)
 Australasian Regional Assoc of Zoological Parks & Aquaria, NSW (2002)
 Australian Association of Bush Regenerators, NSW (2002)
 Australian Native Plant Society (Canberra Region), ACT (2002)
 Blue Mtns Wildplant Rescue Service, NSW (2001)
 Burnley College, VIC (1999)
 Burrendong Arboretum, NSW (2001)
 Canberra and South-East Region Environment Centre, ACT (2002)
 Community Biodiversity Network, NSW (2002)
 Dept Land and Water Conservation, NSW (2002)
 Friends of Eurobodalla Regional Botanic Gardens, NSW (2000)
 Friends of Grasslands, ACT (2002)
 Friends of Peter Francis Points Arboretum, VIC (2002)
 Friends of the Australian National Botanic Gardens, ACT (2002)
 Friends of the North Coast Regional Botanic Garden, NSW (1999)
 Greening Australia - South West Slopes, NSW (2002)
 Greening Australia South-West Plains, NSW (1999)
 Greening Australia Ltd, ACT (2001)
 Greening Australia NSW Inc., NSW (2002)
 Hunter Region Botanic Gardens Ltd., NSW (2000)
 Indigenous Flora and Fauna Association, VIC (2000)
 Lismore Rainforest Botanic Gardens, NSW (2000)
 Merri Creek Management Committee, VIC (2000)
 Monarto Zoological Park, SA (2000)
 Olive Pink Botanic Garden, NT (2002)
 Pangarinda Arboretum Committee, SA (2001)
 Royal Zoological Society of SA Inc., SA (2001)

SGAP - Dryandra Study Group, WA (2002)
 SGAP - Ipswich Branch, QLD (2000)
 SGAP - NSW Ltd - Blue Mountains Group, NSW (2002)
 SGAP - Qld Region Inc., QLD (2001)
 SGAP - South West Slopes, NSW (2002)
 SGAP - Warringah, NSW (2001)
 Stony Range Flora & Fauna Reserve, NSW (2002)
 Tasmanian Arboretum Inc, TAS (2001)
 Threatened Species Network, NSW (2002)
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 Threatened Species Network, QLD (2002)
 Threatened Species Network, SA (2002)
 Threatened Species Network, TAS (2002)
 Threatened Species Network, VIC (2002)
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 Trust for Nature, VIC (2001)
 Victorian National Parks Association, VIC (2002)
 Wildflower Society of WA - Northern Suburbs Branch, WA (2001)
 Wildflower Society of WA Inc, WA (2000)
 Wildlife Preservation Society of Australia Inc, NSW (2002)
 World Wide Fund for Nature Australia, NSW (2001)

Individual Members

Gail Abbott, NSW (2001)
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 N Ashwath, QLD (2000)
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 Bernie Kocur, NSW (1999)
 Patty Kolln, NSW (2000)
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 Dr Peter Lawrence, QLD (2000)
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 Gordon Limburg, NSW (2002)
 Willem Lindemans, VIC (2002)
 Debra Little, NSW (2002)
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 Vicki Long, WA (2002)
 Ian Lunt, NSW (2000)
 Stephanie Lymburner, NSW (2002)
 Alexander Mackenzie, NSW (2001)
 Elizabeth MacPhee, VIC (2001)
 Bob Makinson, NSW (2000)
 Marcus Mantscheff, VIC (2001)
 Warren Martin, NSW (1999)
 David Mason, NSW (2000)
 Damian McCann, NSW (2002)
 Amanda McDonald, NSW (2002)
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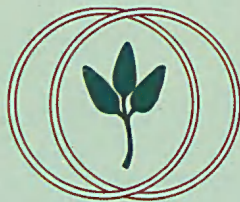
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Fifth National Conference and Conservation Techniques Workshops

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FIRST NOTICE AND CALL FOR ABSTRACTS



Participants enjoying the field trips (top left), practical sessions (left) and workshops (above) at previous ANPC conferences and Conservation Techniques Workshops. Photos - Jeanette Mill.

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